

IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

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B. 1. (Currently Amended) A method for processing video image data, ~~including includes~~ a plurality of different image data types ~~of data such as position, texture and color data,~~ the method comprising the steps of:

providing tasks to be performed on each different image data type ~~of data of the image data;~~

dividing the image data into a plurality of groups based on the image data type; ~~of data for each group,~~

determining a set of arithmetic operations required to accomplish the tasks provided for the corresponding image data type ~~of data;~~

assigning each arithmetic operation to one of a plurality of commonly used arithmetic units;

performing each arithmetic operation by the assigned arithmetic unit, whereby each image data type ~~of data~~ is transformed in accordance with the corresponding provided tasks; and

combining the transformed image data of each group.

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2. (Currently Amended) The method of claim 1 wherein the plurality of image data groups ~~comprises~~ includes a position group for position vertex parameters, a color group for color vertex parameters, and a texture group for texture vertex parameters.

3. (Currently Amended) The method of ~~claims~~ claim 1 wherein the plurality of said commonly used arithmetic units ~~comprises~~ includes an addition unit and a multiplication unit.

4. (Currently Amended) The method of claim 1 wherein the determining a set of arithmetic operations for each task step is based on in part by a sequence of arithmetic states.

5. (Currently Amended) The method of claim 1 further comprising the step of providing a queue for each of the plurality of commonly used arithmetic units, and wherein each assigned arithmetic operation is sent to the queue associated with its commonly used arithmetic unit.

6. (Currently Amended) The method of claim 5, wherein each task includes one or more steps of one or more arithmetic operation types such that the

steps of a task can be performed by different arithmetic units, the steps to be performed in a sequence, the method further comprising the step of

preventing the arithmetic units from performing the arithmetic operations of a task out of sequence.

7. (Currently Amended) An apparatus for processing video image data, including a plurality of different image data types ~~of data such as position, texture and color data~~, the apparatus comprising:

means for providing tasks to be performed on each different image data type ~~of data of the image data~~;

means for dividing the image data into a plurality of groups based on the image data type; ~~of data for each group, and~~

means for determining a set of arithmetic operations required to accomplish the tasks provided for the corresponding image data type ~~of data~~;

means for assigning each arithmetic operation to one of a plurality of commonly used arithmetic units;

means for performing each arithmetic operation by the assigned arithmetic unit, whereby each image data type ~~of data~~ is transformed in accordance with the corresponding provided tasks; and

means for combining the transformed image data of each group.

8. (Currently Amended) The apparatus of claim 7 wherein the plurality of image data groups ~~comprises~~ includes a position group for position vertex parameters, a color group for color vertex parameters, and a texture group for texture vertex parameters.

9. (Currently Amended) The apparatus of claim 7 wherein the plurality of said commonly used arithmetic units ~~comprises~~ includes an addition unit and a multiplication unit.

10. (Currently Amended) The apparatus of claim 7 wherein for each image data group, the arithmetic operation set ~~comprises~~ includes a set of arithmetic states and the determined operations for each task are defined by a sequence of the set's arithmetic states.

11. (Currently Amended) The apparatus of claim 7 10 further comprising a queue for each of said commonly used arithmetic units, ~~and~~ wherein each arithmetic operation is sent to the queue associated with its commonly used arithmetic unit.

12. (Original) The apparatus of claim 11 further comprising means for preventing the arithmetic units from performing the arithmetic operations of a task out of sequence.

13. (Currently Amended) An apparatus for performing video processing, the video processing including performing tasks on vertex parameters, the apparatus comprising:

a scheduler having an input configured to receive tasks, said scheduler and ~~for~~ arranging the vertex parameters to be processed into a plurality of groups based on in part characteristics of the vertex parameters;

~~the~~ a sequencer for each group, said sequencer:

determining the tasks required to process that group's parameters;_i

determining a set of arithmetic operations required to accomplish that group's tasks;_i

assigning each arithmetic operation to be performed ~~by~~ to one of a plurality of commonly used arithmetic units;_i and

sending each of the arithmetic operations of each of that group's tasks to the arithmetic unit associated with that arithmetic operation; and

each of said commonly used arithmetic units, having an input configured to receive the sent arithmetic operations and vertex parameters associated with the


sent operations, each arithmetic unit ~~and for~~ performing the sent arithmetic operations on the sent vertex parameters.

14. (Currently Amended) The apparatus of claim 13 wherein the plurality of groups ~~comprises~~ includes a position group for position vertex parameters, a color group for color vertex parameters, and a texture group for texture vertex parameters.

15. (Currently Amended) The apparatus of claim 13 wherein ~~the said~~ plurality of ~~said~~ commonly used arithmetic units ~~comprises~~ includes an addition unit and a multiplication unit.

16. (Currently Amended) The apparatus of claim 13 wherein for each group, the arithmetic operation set ~~comprises~~ includes a set of arithmetic states and the determined operations for each task are defined by a sequence of the set's arithmetic states.

17. (Currently Amended) The apparatus of claim ~~13~~ 16 further comprising a queue for each of said commonly used arithmetic units, ~~and~~ wherein

 the sent arithmetic operations are sent to the queue associated with its commonly used arithmetic unit.

18. (Currently Amended) The apparatus of claim 17 wherein ~~the~~ said sequencer prevents ~~the~~ said arithmetic units from performing the arithmetic operations of a task out of sequence.
